

REMARKS

Applicants submit herewith legible copies of the foreign patent documents referred to in paragraph 6 (page 2) of the Office Action.

The objection to the Abstract has been addressed as has been the objections to Figs. 4 and 5 and to Claims 3 and 4.

Figs. 1-3 are not representative of prior art. They show, respectively, distribution in a progressive lens from the starting design, after superposition with a focus and after optimization in accordance with the present invention. Please see [0075]-[0082] of the published application for a more detailed explanation of those figures, which illustrate the effects and advantages of Applicants' invention.

Although Fig. 5 is now mentioned in the Substitute Specification, Applicants do not believe that the Office rules and practice require the flow chart boxes to be numbered where they are each clearly labeled. Reconsideration is requested in this regard.

The Office Action refers to 35 U.S.C. §101, but does not appear to raise any issue with respect thereto. Applicant believes it sufficient to say that the claims, as broadly but reasonably construed, speak for themselves and are believed to comply with section 101 as being transformative. If Applicants have not fully understood the Examiner's purpose in referencing section 101, clarification is requested.

Applicants respectfully traverse the rejections of Claims 3-5 under 35 U.S.C. §112, second paragraph, and request reconsideration in view of the foregoing amendments and following comments.

Nothing in the statute requires so-called "necessary structural connections" between claim elements. Any patent applicant is entitled to claim combinations and subcombinations of his/her invention as long as the claim defines the metes and bounds and is patentably distinct from that which has preceded the invention. Necessary connections between elements should either be described in the Specification and/or drawings, or alternatively, be apparent to one skilled in the art when seeing the disclosure of the invention. Furthermore, the suggestion of "structural connections" in method claims is clearly at odds with good claiming practices.

Applicants have reviewed the claims in an effort to address the Examiner's concerns as raised in paragraph 14 of the Office Action. The claim terminology finds clear antecedent basis in the disclosure. As to questions regarding "how", however, Applicants submit that the disclosure, not the claims, is the place where the answers should be found or be apparent to one of ordinary skill. Of course, to the extent that further working issues are deemed to remain, the Examiner is requested to contact the undersigned prior to issuance of any further written action in an effort to resolve section 112 issues and thereby expedite prosecution.

The rejections of Claim 3 as being unpatentable over Kitani in view of Applicants' own admission (AOA) and of Claims 4 and 5 as being unpatentable over Kitani in view of AOA and Komatsu et al, both under 35 U.S.C. §103(a), are respectfully traversed. Again, reconsideration is requested in view of the foregoing amendments and following comments. Applicants submit that neither Kitani nor Komatsu et al teach or suggest creating at least one basic design based on theoretical specifications; creating starting designs based from these basic designs; calculating individual progressive lenses for wearing tests from the starting designs and adjusting of the starting designs on the basis of the wearing tests; and creating final starting designs for production from the adjusted starting designs. Nor have the Applicants ever admitted that the prior art suggested a combination of such arts.

Likewise, neither the prior art nor AOA suggest that it was known to combine the following acts of calculating a toric or atoric superimposed surface; converting the toric or atoric superimposed surface into an optimization spline; calculating a new principal line of vision; interpolating and transforming the setpoint specifications; and expanding the progressive surface.

The Kitani lens design method includes a first optimization step (col. 12, line 50 to col. 14, line 4), in which only predetermined (default) values of the lens power (col. 13, line 13), as well as predetermined values for the object distances, distance PD, frame data, etc. (see col. 12, lines 31-37) are taken into account. A

progressive lens is thereby calculated and corresponds to a conventional progressive lens (col. 14, line 1).

In Kitani's second manufacturing step, individual prescription values (sphere, astigmatism, etc.) and the individual wearer data (in particular, data of the individual VR value) are obtained at a spectacles store and transmitted to a host computer at the lens maker (col. 14, line 4 to col. 15, line 46). At the plant side, the host computer processes the received information and determines the final prescription lens. Then, a spectacles wearing optical model is simulated from the data, and a computer calculates a lens design program containing a database of the progressive power lens design. Finally, the final concave and convex face forms and lens thicknesses (the prescribed lens) are determined (col. 16, lines 1-31) resulting in a progressive lens specially adapted for a specific customer.

The above-described approach is very different from the claimed invention in this application which can be described as follows. The creation of individual progressive spectacle lens adapted for a specific customer starts with determining a basic design (or a limited number of basic designs) based on theoretical data. The purpose of this act is to determine, based on theoretical considerations, the size and the position of the visual areas (distance, near and progressive area), the maximal allowable astigmatism, the gradients of the astigmatism and refractive error, the distortions, and other parameters of a

progressive spectacle lens. Of course, the basic design can be created semi-manually, for example, by an experienced optical engineer using suitable software.

In an extreme case a single basic design is created. This basis design may be created for a lens having a weak power (e.g., a plano lens), without astigmatic or prismatic power and for a medium value of the addition (e.g., for ADD = 2 diopter). In addition, the individual parameters of the spectacle lens wearer and the wearing condition (such as the corneal vertex distance, the interpupillary distance, the frame lens angle, etc.) are set to default (i.e., standard or average) values. For an exemplary list of the individual parameters and their default values, please refer to [0021] to [0031] of the published version of the present application.

When the basic design(s) is(are) determined, it(they) have to be checked or tested, and optionally adjusted or modified based on one or more wearing tests. For carrying out the wearing tests, progressive lenses have to be calculated. In the past, the calculation of progressive lenses for the wearing tests has been relatively complicated, a semi-manual process requiring the involvement of an experienced optical engineer familiar with the design and development of progressive spectacle lenses.

In order to carry out the testing and design adjusting process more efficiently and easily than in the past, the present invention provides that the

basic design(s) is(are) first "extended" so as to cover a range of powers of the lens, thereby creating a set of starting designs which usually cover a central range or powers of the lens. Each of the starting designs is calculated for the default values of the individual parameters of spectacle lens wearer and the wearing position. The table in [0020] of the published version of this application illustrate an example of the power and the addition combinations for which starting designs are created.

The individual progressive lenses for the test wearers are calculated based on (or from) the starting designs, while taking into account the individual data of each of the test wearers for which the individual progressive lens is calculated. The calculation and optimization of an individual progressive lens adapted for a specific lens wearer (e.g., a specific test wearer) is disclosed in detail in Fig. 5 and in the related description, i.e. paragraphs [0036] to [0067] of the published application. The individual data of the test wearers may deviate from the default values for the individual parameters for which the respective starting design has been calculated. Ideally, however, the individual data of the test wearers should be to a great extent within the range, for which the final individual progressive lenses are offered by the manufacturer.

Based on the results of the wearing tests, each of the starting designs is adjusted or modified. When the test phase is completed, the final starting designs for production purposes (i.e., designs which would not undergo further

wearing tests) are determined based on the adjusted starting designs by, for example, "extending" the adjusted starting designs, so as to cover a greater range of powers than the starting designs. The table in [0035] of the published application illustrates an example of the power and the addition combinations for which final starting designs for the production are created or determined.

In the actual production, an individual progressive lens for a specific customer is computed and manufactured upon order using the final starting designs and taking into account the individual data of the customer (individual prescription data and individual parameters). As the individual data of the customer will generally deviate from the individual data of the test persons taken into account when computing individual progressive lenses for the wearing tests, the present invention calculates individual progressive lenses by: (1) calculating individual progressive lenses for the wearing tests, which correspond to (or takes into account) individual data of the test persons, or (2) calculating individual progressive lenses for the final customer which take into account individual data of the final customer. No such method is reasonably inferable from any of the prior art and certainly not from anything Applicants have said in characterizing the prior art.

A prima facie case of obviousness has not been established. Accordingly, early and favorable action is earnestly solicited.

Serial No. 10/551,127
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Attorney Docket No. 100341.56596US

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 100341.56596US).

Respectfully submitted,

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